

# SEQUENCE LISTING

<110> Bartlett, Jeffrey S.

<120> AAV VECTORS AND METHODS

<130> 28335/36996US

<150> US 60/260,124

<151> 2001-01-05

<160> 15

<170> PatentIn version 3.1

<210> 1

<211> 14

<212> PRT

<213> Peptide

<400> 1

Thr Gly Cys Asp Cys Arg Gly Asp Cys Phe Cys Gly Leu Ser  
1 5 10

<210> 2

<211> 11

<212> PRT

<213> Peptide

<400> 2

Thr Gly Thr Pro Phe Tyr Leu Lys Gly Leu Ser  
1 5 10

204040-2268E001

<210> 3  
<211> 15  
<212> PRT  
<213> Peptide

<400> 3

Thr Gly His Cys Ser Thr Cys Tyr Tyr His Lys Ser Gly Leu Ser  
1 5 10 15

<210> 4  
<211> 11  
<212> PRT  
<213> Peptide

<400> 4

Thr Gly Thr Pro Phe Tyr Leu Lys Ala Leu Ser  
1 5 10

<210> 5  
<211> 11  
<212> PRT  
<213> Peptide

<400> 5

Thr Gly Thr Pro Phe Tyr Leu Lys Leu Leu Ala  
1 5 10

<210> 6  
<211> 8  
<212> PRT  
<213> Peptide

<400> 6

Thr Gly Thr Pro Phe Tyr Leu Lys  
1 5

<210> 7  
<211> 5  
<212> PRT  
<213> Peptide

<400> 7  
Thr Gly Ala Leu Ser  
1 5

<210> 8  
<211> 5  
<212> PRT  
<213> Peptide

<400> 8  
Thr Gly Leu Leu Ala  
1 5

<210> 9  
<211> 5  
<212> PRT  
<213> Peptide

<400> 9  
Thr Gly Gly Leu Ser  
1 5

<210> 10  
<211> 9  
<212> PRT  
<213> Peptide

<400> 10  
Cys Asp Cys Arg Gly Asp Cys Phe Cys  
1 5

<210> 11  
 <211> 15  
 <212> PRT  
 <213> Peptide

<400> 11

Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu  
 1 5 10 15

<210> 12

<211> 4679

<212> DNA

<213> adeno-associated virus 2

<400> 12

ttggccactc cctctctgcg cgctcgctcg ctcaactgagg ccgggcgacc aaaggctcgcc	60
cgacgccccg gctttgcccc ggcggcctca gtgagcgagc gagcgcgag agagggagtg	120
gccaactcca tcaactagggg ttcttgagg ggtggagtcg tgacgtgaat tacgtcatag	180
ggttagggag gtctgttatt agaggtcacg tgagtgtttt gcgacatttt gcgacaccat	240
gtggtcacgc tgggtattta agccccgagtg agcacgcagg gtctccattt tgaagcggga	300
ggtttgaacg cgcagccgcc atgccggggg tttacgagat tgtgattaag gtccccagcg	360
accttgacga gcatctgccc ggcattttctg acagctttgt gaactgggtg gccgagaagg	420
aatgggagtt gccgccagat tctgacatgg atctgaatct gattgagcag gcaccctga	480
ccgtggccga gaagctgcag cgcgactttc tgacggaatg gcgccgtgtg agtaaggccc	540
cggaggccct tttctttgtg caatttgaga agggagagag ctacttccac atgcacgtgc	600
togtggaaac caccggggtg aaatccatgg ttttgggacg tttcctgagt cagattcgcg	660
aaaaactgat tcagagaatt taccgcggga tcgagccgac tttgccaaac tggttcgcg	720
tcacaaagac cagaaatggc gccggaggcg ggaacaagggt ggtggatgag tgctacatcc	780
ccaattactt gtcccccaaa acccagcctg agctccagtg ggcgtggact aatatggaac	840
agtattttaag cgctgtttg aatctcacgg agcgtaaacg gttggtggcg cagcatctga	900
cgcacgtgtc gcagacgcag gagcagaaca aagagaatca gaatcccaat tctgatgcgc	960
cggatgatcag atcaaaaact tcagccaggt acatggagct ggtcgggtgg ctctgggaca	1020
aggggattac ctcgagagaag cagtggatcc aggaggacca ggccctcatc atctccttca	1080

atgcggcctc	caactcgcgg	teccaaatca	aggctgcctt	ggacaatgcg	ggaaagatta	1140
tgagcctgac	taaaaccgcc	cccgactacc	tggtgggcca	gcagcccggtg	gaggacattt	1200
ccagcaatcg	gatttataaa	atthttggaac	taaacgggta	cgatccccc	tatgcggctt	1260
ccgtctttct	gggatgggce	acgaaaaagt	tcggcaagag	gaacaccatc	tggctgtttg	1320
ggcctgcaac	taccgggaag	accaacatcg	cggaggccat	agcccacact	gtgcccttct	1380
acgggtgcgt	aaactggacc	aatgagaact	ttcccttcaa	cgactgtgtc	gacaagatgg	1440
tgatctggtg	ggaggagggg	aagatgaccg	ccaaggctcg	ggagtcggcc	aaagccattc	1500
tcggaggaag	caaggtgcgc	gtggaccaga	aatgcaagtc	ctcggcccag	atagaccgga	1560
ctcccgatg	cgtcacctcc	aacaccaaca	tgtgcgcctg	gattgacggg	aactcaacga	1620
ccttcgaaca	ccagcagccg	ttgcaagacc	ggatgttcaa	atthgaactc	acccgccgtc	1680
tggatcatga	ctttgggaag	gtcaccaagc	aggaagtcaa	agactthttc	cggtgggcaa	1740
aggatcacgt	ggttgagggtg	gagcatgaat	tctacgtcaa	aaaggggtga	gccaagaaaa	1800
gacccgcccc	cagtgcgcga	gatataagt	agcccaaacg	ggtgcgcgag	tcagttgcgc	1860
agccatcgac	gtcagacgcg	gaagcttcca	tcaactacgc	agacagggtac	caaaacaaat	1920
gttctcgta	cgtgggcatg	aatctgatgc	tgtttccctg	cagacaatgc	gagagaatga	1980
atcagaattc	aaatatctgc	ttcactcacg	gacagaaaga	ctgttttagag	tgctttcccg	2040
tgtcagaatc	tcaaccgctt	tctgtcgta	aaaaggcgta	tcagaaactg	tgctacattc	2100
atcatatcat	gggaaagggtg	ccagacgctt	gcactgcctg	cgatctggtc	aatgtggatt	2160
tggatgactg	catctttgaa	caataaatga	tttaaatacag	gtatggctgc	cgatgggttat	2220
cttcagatt	ggctcgagga	cactctctct	gaaggaataa	gacagtgggtg	gaagctcaaa	2280
cctggcccac	caccaccaa	gcccgcagag	cggcataagg	acgacagcag	gggtcttgtg	2340
cttctgggt	acaagtacct	cggacccttc	aacggactcg	acaagggaga	gccgggtcaac	2400
gaggcagacg	ccgcggccct	cgagcacgac	aaagcctacg	accggcagct	cgacagcgga	2460
gacaaccgct	acctcaagta	caaccacgcc	gacgcggagt	ttcaggagcg	ccttaaagaa	2520
gatacgtctt	ttgggggcaa	cctcggacga	gcagtcttcc	aggcgaaaaa	gagggttctt	2580
gaacctctgg	gcctgggtga	ggaacctgtt	aagacggctc	cgggaaaaaa	gaggccggtg	2640
gagcactctc	ctgtggagcc	agactcctcc	tcgggaaccg	gaaaggcggg	ccagcagcct	2700
gcaagaaaaa	gattgaattt	tggtcagact	ggagacgcag	actcagtacc	tgacccccag	2760
cctctcggac	agccaccagc	agccccctct	ggtctgggaa	ctaatacgat	ggctacaggc	2820
agtggcgcac	caatggcaga	caataacgag	ggcgccgacg	gagtgggtaa	ttcctcggga	2880
aattggcatt	gcgattccac	atggatgggc	gacagagtca	tcaccaccag	caccggaacc	2940
tgggcccctg	ccacctacaa	caaccacctc	tacaaacaaa	tttccagcca	atcaggagcc	3000

tcgaacgaca atcaactactt tggctacagc accccttggg ggtatttttga cttcaacaga 3060  
 ttccactgcc acttttcacc acgtgactgg caaagactca tcaacaacaa ctgggggattc 3120  
 cgaccecaaga gactcaactt caagctcttt aacattcaag tcaaagaggt cacgcagaat 3180  
 gacggtacga cgacgattgc caataacctt accagcacgg ttcaggtgtt tactgactcg 3240  
 gagtaccagc tcccgtagct cctcggtctg gcgcacaaag gatgcctccc gccgttccca 3300  
 gcagacgtct tcatggtgcc acagtatgga tacctcacc tgaacaacgg gagtcaggca 3360  
 gtaggacgct cttcatttta ctgcctggag tactttcctt ctcagatgct gcgtaccgga 3420  
 aacaacttta ccttcagcta cacttttgag gacgttcctt tccacagcag ctacgctcac 3480  
 agccagagtc tggaccgtct catgaatcct ctcacgacc agtacctgta ttacttgagc 3540  
 agaacaacaa ctccaagtgg aaccaccacg cagtcaaggc ttcagttttc tcaggccgga 3600  
 gcgagtgcga ttcgggacca gtctaggaac tggcttctctg gaccctgtta ccgccagcag 3660  
 cgagtatcaa agacatctgc ggataacaac aacagtgaat actcgtggac tggagctacc 3720  
 aagtaccacc tcaatggcag agactctctg gtgaatccgg gcccggccat ggcaagccac 3780  
 aaggacgatg aagaaaagtt ttttctcag agcgggggttc tcactcttgg gaagcaaggc 3840  
 tcagagaaaa caaatgtgga cattgaaaag gtcatgatta cagacgaaga ggaaatcagg 3900  
 acaaccaatc ccgtggctac ggagcagtat ggttctgtat ctaccaacct ccagagaggc 3960  
 aacagacaag cagctaccgc agatgtcaac acacaaggcg ttcttccagg catggtcttg 4020  
 caggacagag atgtgtacct tcagggggcc atctgggcaa agattccaca cacggacgga 4080  
 cattttcacc cctctccct catgggtgga ttcggactta aacaccctcc tccacagatt 4140  
 ctcacaaaga acaccccggt acctgcgaat ccttcgacca ccttcagtgc ggcaaagttt 4200  
 gcttcttca tcacacagta ctccacggga caggtcagcg tggagatcga gtgggagctg 4260  
 cagaaggaaa acagcaaacg ctggaatccc gaaattcagt acacttccaa ctacaacaag 4320  
 tctgttaatg tggactttac tgtggacact aatggcgtgt attcagagcc tcgccccatt 4380  
 ggcaccagat acctgactcg taatctgtaa ttgcttgta atcaataaac cgtttaattc 4440  
 gtttcagttg aactttggtc tctgcgtatt tctttcttat ctagtttcca tggctacgta 4500  
 gataagtagc atggcggggt aatcattaac tacaaggaa ccctagtgat ggagttggcc 4560  
 actcctctc tgcgcgtctg ctcgctcact gaggcggggc gaccaaaggt cggccgacgc 4620  
 ccgggctttg cccggggcgg ctcagtgagc gagcgagcgc gcagagaggg agtggccaa 4679

<210> 13

<211> 735

<212> PRT

<213> adeno-associated virus 2 VP1 capsid protein

<400> 13

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Thr Leu Ser  
1 5 10 15

Glu Gly Ile Arg Gln Trp Trp Lys Leu Lys Pro Gly Pro Pro Pro Pro  
20 25 30

Lys Pro Ala Glu Arg His Lys Asp Asp Ser Arg Gly Leu Val Leu Pro  
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Phe Asn Gly Leu Asp Lys Gly Glu Pro  
50 55 60

Val Asn Glu Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp  
65 70 75 80

Arg Gln Leu Asp Ser Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala  
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly  
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Val Leu Glu Pro  
115 120 125

Leu Gly Leu Val Glu Glu Pro Val Lys Thr Ala Pro Gly Lys Lys Arg  
130 135 140

Pro Val Glu His Ser Pro Val Glu Pro Asp Ser Ser Ser Gly Thr Gly  
145 150 155 160

Lys Ala Gly Gln Gln Pro Ala Arg Lys Arg Leu Asn Phe Gly Gln Thr  
165 170 175

Gly Asp Ala Asp Ser Val Pro Asp Pro Gln Pro Leu Gly Gln Pro Pro  
180 185 190

Ala Ala Pro Ser Gly Leu Gly Thr Asn Thr Met Ala Thr Gly Ser Gly  
195 200 205

Ala Pro Met Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Asn Ser  
210 215 220

204010"268E001

Ser	Gly	Asn	Trp	His	Cys	Asp	Ser	Thr	Trp	Met	Gly	Asp	Arg	Val	Ile	225	230	235	240
Thr	Thr	Ser	Thr	Arg	Thr	Trp	Ala	Leu	Pro	Thr	Tyr	Asn	Asn	His	Leu	245	250	255	
Tyr	Lys	Gln	Ile	Ser	Ser	Gln	Ser	Gly	Ala	Ser	Asn	Asp	Asn	His	Tyr	260	265	270	
Phe	Gly	Tyr	Ser	Thr	Pro	Trp	Gly	Tyr	Phe	Asp	Phe	Asn	Arg	Phe	His	275	280	285	
Cys	His	Phe	Ser	Pro	Arg	Asp	Trp	Gln	Arg	Leu	Ile	Asn	Asn	Asn	Trp	290	295	300	
Gly	Phe	Arg	Pro	Lys	Arg	Leu	Asn	Phe	Lys	Leu	Phe	Asn	Ile	Gln	Val	305	310	315	320
Lys	Glu	Val	Thr	Gln	Asn	Asp	Gly	Thr	Thr	Thr	Ile	Ala	Asn	Asn	Leu	325	330	335	
Thr	Ser	Thr	Val	Gln	Val	Phe	Thr	Asp	Ser	Glu	Tyr	Gln	Leu	Pro	Tyr	340	345	350	
Val	Leu	Gly	Ser	Ala	His	Gln	Gly	Cys	Leu	Pro	Pro	Phe	Pro	Ala	Asp	355	360	365	
Val	Phe	Met	Val	Pro	Gln	Tyr	Gly	Tyr	Leu	Thr	Leu	Asn	Asn	Gly	Ser	370	375	380	
Gln	Ala	Val	Gly	Arg	Ser	Ser	Phe	Tyr	Cys	Leu	Glu	Tyr	Phe	Pro	Ser	385	390	395	400
Gln	Met	Leu	Arg	Thr	Gly	Asn	Asn	Phe	Thr	Phe	Ser	Tyr	Thr	Phe	Glu	405	410	415	
Asp	Val	Pro	Phe	His	Ser	Ser	Tyr	Ala	His	Ser	Gln	Ser	Leu	Asp	Arg	420	425	430	
Leu	Met	Asn	Pro	Leu	Ile	Asp	Gln	Tyr	Leu	Tyr	Tyr	Leu	Ser	Arg	Thr	435	440	445	
Asn	Thr	Pro	Ser	Gly	Thr	Thr	Thr	Gln	Ser	Arg	Leu	Gln	Phe	Ser	Gln	450	455	460	
Ala	Gly	Ala	Ser	Asp	Ile	Arg	Asp	Gln	Ser	Arg	Asn	Trp	Leu	Pro	Gly	465	470	475	480



Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys Thr Ser Ala Asp Asn Asn  
485 490 495

Asn Ser Glu Tyr Ser Trp Thr Gly Ala Thr Lys Tyr His Leu Asn Gly  
500 505 510

Arg Asp Ser Leu Val Asn Pro Gly Pro Ala Met Ala Ser His Lys Asp  
515 520 525

Asp Glu Glu Lys Phe Phe Pro Gln Ser Gly Val Leu Ile Phe Gly Lys  
530 535 540

Gln Gly Ser Glu Lys Thr Asn Val Asp Ile Glu Lys Val Met Ile Thr  
545 550 555 560

Asp Glu Glu Glu Ile Arg Thr Thr Asn Pro Val Ala Thr Glu Gln Tyr  
565 570 575

Gly Ser Val Ser Thr Asn Leu Gln Arg Gly Asn Arg Gln Ala Ala Thr  
580 585 590

Ala Asp Val Asn Thr Gln Gly Val Leu Pro Gly Met Val Trp Gln Asp  
595 600 605

Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr  
610 615 620

Asp Gly His Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu Lys  
625 630 635 640

His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asn  
645 650 655

Pro Ser Thr Thr Phe Ser Ala Ala Lys Phe Ala Ser Phe Ile Thr Gln  
660 665 670

Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln Lys  
675 680 685

Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr  
690 695 700

Asn Lys Ser Val Asn Val Asp Phe Thr Val Asp Thr Asn Gly Val Tyr  
705 710 715 720

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu  
725 730 735

<210> 14

<211> 598

<212> PRT

<213> adeno-associated virus 2 VP2 capsid protien

<400> 14

Met Ala Pro Gly Lys Lys Arg Pro Val Glu His Ser Pro Val Glu Pro  
1 5 10 15

Asp Ser Ser Ser Gly Thr Gly Lys Ala Gly Gln Gln Pro Ala Arg Lys  
20 25 30

Arg Leu Asn Phe Gly Gln Thr Gly Asp Ala Asp Ser Val Pro Asp Pro  
35 40 45

Gln Pro Leu Gly Gln Pro Pro Ala Ala Pro Ser Gly Leu Gly Thr Asn  
50 55 60

Thr Met Ala Thr Gly Ser Gly Ala Pro Met Ala Asp Asn Asn Glu Gly  
65 70 75 80

Ala Asp Gly Val Gly Asn Ser Ser Gly Asn Trp His Cys Asp Ser Thr  
85 90 95

Trp Met Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu  
100 105 110

Pro Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Ser Gln Ser Gly  
115 120 125

Ala Ser Asn Asp Asn His Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr  
130 135 140

Phe Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp Trp Gln  
145 150 155 160

Arg Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe  
165 170 175

Lys Leu Phe Asn Ile Gln Val Lys Glu Val Thr Gln Asn Asp Gly Thr  
180 185 190

Thr Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp  
195 200 205

Ser Glu Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Gln Gly Cys  
210 215 220

Leu Pro Pro Phe Pro Ala Asp Val Phe Met Val Pro Gln Tyr Gly Tyr  
225 230 235 240

Leu Thr Leu Asn Asn Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr  
245 250 255

Cys Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe  
260 265 270

Thr Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr Ala  
275 280 285

His Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr  
290 295 300

Leu Tyr Tyr Leu Ser Arg Thr Asn Thr Pro Ser Gly Thr Thr Thr Gln  
305 310 315 320

Ser Arg Leu Gln Phe Ser Gln Ala Gly Ala Ser Asp Ile Arg Asp Gln  
325 330 335

Ser Arg Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser  
340 345 350

Lys Thr Ser Ala Asp Asn Asn Asn Ser Glu Tyr Ser Trp Thr Gly Ala  
355 360 365

Thr Lys Tyr His Leu Asn Gly Arg Asp Ser Leu Val Asn Pro Gly Pro  
370 375 380

Ala Met Ala Ser His Lys Asp Asp Glu Glu Lys Phe Phe Pro Gln Ser  
385 390 395 400

Gly Val Leu Ile Phe Gly Lys Gln Gly Ser Glu Lys Thr Asn Val Asp  
405 410 415

Ile Glu Lys Val Met Ile Thr Asp Glu Glu Glu Ile Arg Thr Thr Asn  
420 425 430

Pro Val Ala Thr Glu Gln Tyr Gly Ser Val Ser Thr Asn Leu Gln Arg  
435 440 445

Gly Asn Arg Gln Ala Ala Thr Ala Asp Val Asn Thr Gln Gly Val Leu  
450 455 460

Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile  
465 470 475 480

Trp Ala Lys Ile Pro His Thr Asp Gly His Phe His Pro Ser Pro Leu  
485 490 495

Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys  
500 505 510

Asn Thr Pro Val Pro Ala Asn Pro Ser Thr Thr Phe Ser Ala Ala Lys  
515 520 525

Phe Ala Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu  
530 535 540

Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu  
545 550 555 560

Ile Gln Tyr Thr Ser Asn Tyr Asn Lys Ser Val Asn Val Asp Phe Thr  
565 570 575

Val Asp Thr Asn Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg  
580 585 590

Tyr Leu Thr Arg Asn Leu  
595

<210> 15

<211> 533

<212> PRT

<213> adeno-associated virus 2 VP3 capsid protein

<400> 15

Met Ala Thr Gly Ser Gly Ala Pro Met Ala Asp Asn Asn Glu Gly Ala  
1 5 10 15

Asp Gly Val Gly Asn Ser Ser Gly Asn Trp His Cys Asp Ser Thr Trp  
20 25 30

Met Gly Asp Arg Val Ile Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro  
35 40 45

Thr Tyr Asn Asn His Leu Tyr Lys Gln Ile Ser Ser Gln Ser Gly Ala  
50 55 60

Ser Asn Asp Asn His Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe  
65 70 75 80

Asp Phe Asn Arg Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg  
85 90 95

Leu Ile Asn Asn Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys  
100 105 110

Leu Phe Asn Ile Gln Val Lys Glu Val Thr Gln Asn Asp Gly Thr Thr  
115 120 125

Thr Ile Ala Asn Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser  
130 135 140

Glu Tyr Gln Leu Pro Tyr Val Leu Gly Ser Ala His Gln Gly Cys Leu  
145 150 155 160

Pro Pro Phe Pro Ala Asp Val Phe Met Val Pro Gln Tyr Gly Tyr Leu  
165 170 175

Thr Leu Asn Asn Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys  
180 185 190

Leu Glu Tyr Phe Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Thr  
195 200 205

Phe Ser Tyr Thr Phe Glu Asp Val Pro Phe His Ser Ser Tyr Ala His  
210 215 220

Ser Gln Ser Leu Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu  
225 230 235 240

Tyr Tyr Leu Ser Arg Thr Asn Thr Pro Ser Gly Thr Thr Thr Gln Ser  
245 250 255

Arg Leu Gln Phe Ser Gln Ala Gly Ala Ser Asp Ile Arg Asp Gln Ser  
260 265 270

Arg Asn Trp Leu Pro Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys  
275 280 285

Thr Ser Ala Asp Asn Asn Asn Ser Glu Tyr Ser Trp Thr Gly Ala Thr  
290 295 300

Lys Tyr His Leu Asn Gly Arg Asp Ser Leu Val Asn Pro Gly Pro Ala  
305 310 315 320

Met Ala Ser His Lys Asp Asp Glu Glu Lys Phe Phe Pro Gln Ser Gly  
325 330 335

Val Leu Ile Phe Gly Lys Gln Gly Ser Glu Lys Thr Asn Val Asp Ile  
340 345 350

Glu Lys Val Met Ile Thr Asp Glu Glu Glu Ile Arg Thr Thr Asn Pro  
355 360 365

Val Ala Thr Glu Gln Tyr Gly Ser Val Ser Thr Asn Leu Gln Arg Gly  
370 375 380

Asn Arg Gln Ala Ala Thr Ala Asp Val Asn Thr Gln Gly Val Leu Pro  
385 390 395 400

Gly Met Val Trp Gln Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp  
405 410 415

Ala Lys Ile Pro His Thr Asp Gly His Phe His Pro Ser Pro Leu Met  
420 425 430

Gly Gly Phe Gly Leu Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn  
435 440 445

Thr Pro Val Pro Ala Asn Pro Ser Thr Thr Phe Ser Ala Ala Lys Phe  
450 455 460

Ala Ser Phe Ile Thr Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile  
465 470 475 480

Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile  
485 490 495

Gln Tyr Thr Ser Asn Tyr Asn Lys Ser Val Asn Val Asp Phe Thr Val  
500 505 510

Asp Thr Asn Gly Val Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr  
515 520 525

Leu Thr Arg Asn Leu  
530

<210> 16

<211> 6

<212> PRT

<213> Peptide

<400> 16

Thr Pro Phe Tyr Leu Lys  
1 5

<210> 17

<211> 10

<212> PRT

<213> Peptide

<400> 17

His Cys Ser Thr Cys Tyr Tyr His Lys Ser  
1 5 10

<210> 18

<211> 5

<212> PRT

<213> Peptide

<400> 18

Phe Val Phe Lys Pro  
1 5